

REMARKS

Claims 1-11 are actively pending in the application. By previous response, claims 12 through 14 have been withdrawn from consideration in response to a restriction requirement.

Claim Rejections Under 35 U.S.C. §103, Claims 1-4, 6 and 11

The Examiner has rejected claims 1-4, 6 and 11 under 35 U.S.C. § 103(a) as being unpatentable over G.B. Patent Specification No. 979,616 (hereinafter "Honeywell") in view of U.S. Patent No. 5,813,765 (Peel *et al.*, hereinafter "Peel"). The Examiner states that Honeywell discloses a temperature measuring device for measuring the temperature of a fluid flowing in a tube, comprising an electric temperature sensor [thermocouple junction formed by 34 and 35] securely attached to an outer side of a central tube section [26] by soldering. The Examiner further states that the temperature sensor is mounted on strip conductors/leads [30, 28] on the outer side of the tube section. Still further, the Examiner states that said temperature sensor is connected to an end of the connection cable [36] via the strip conductors [30, 28] mounted along the tube section. The Examiner admits that Honeywell fails to disclose the use of thermally and electrically conductive paste to mount the temperature sensor. The Examiner contends that Peel discloses a temperature sensor having leads attached to an antenna by epoxy, and concludes that it would have been obvious to one of ordinary skill in the art to modify the device of Honeywell by securing the strip conductors/leads with epoxy to ensure proper mounting of the sensor and the sensor leads/strips. Applicants respectfully traverse this rejection.

Claim 1 is directed to a temperature measuring device and recites, in pertinent part,

an electric temperature sensor (2) securely attached to an outer side of a central tube section (1)... wherein the temperature sensor (2) is **mounted on strip conductors** (3) on the outer side of the tube section (1) **using a thermally and electrically good-conducting paste**.

Applicants note that the term "strip conductor" has been translated from the German term "Leiterbahn" used in the German priority application. Applicants further note that an alternative translation of the term "Leiterbahn" is "track". Attached are copies of the title page and page 619 of Ernst, Richard, Dictionary of Engineering and Technology, Vol. I,

German-English, Oscar Brandstetter Verlag, Wiesbaden, 5th Edition (1989). Page 619 shows that the noun “Leiterbahn” may be translated as either “strip conductor” or “track”. Applicants submit that both English terms “strip conductor” and “track” communicate that the conductors of the present invention are not typical round wire conductors, but rather conductors formed as narrow strips on an insulating substrate (see Fig. 1a, reference number 3 and the cross-section view in Fig. 3 under reference number 2).

Honeywell does not disclose each and every element of the present invention. In a first embodiment, Honeywell discloses a thermocouple temperature sensor having bare ends of leads 28, 30 brazed or silver soldered at junctions 34 and 35 to the outer surface of tubular portion 26 to form a hot junction. Page 2, lines 25-29. In a second embodiment, Honeywell discloses a resistance thermometer 74 comprising a resistance coil 72 having electrical leads 76, 78. Honeywell discloses that the resistance coil 72 can be connected to the outer surface of the tube 26, but is silent regarding the nature of the connection. Applicants respectfully disagree with the Examiner’s characterization of the leads 28, 30 as “strip conductors”. The leads 28, 30 and 76, 78 are not disclosed to be conductors in strip or track form.

Applicants respectfully submit that Honeywell fails to disclose not only a temperature sensor mounted on a strip conductor using a thermally and electrically conductive paste, as admitted by the Examiner, but also fails to disclose strip conductors and a temperature sensor mounted on a strip conductor. Accordingly, there is no objective teaching in Honeywell that would enable one of ordinary skill in the art to modify the invention of Honeywell in a manner that would render the present invention obvious under 35 U.S.C. § 103(a).

Peel does not disclose each and every element of the present invention. Peel discloses a temperature sensor disposed within an antenna finial 18. Leads 30, 32 connect the temperature sensor to a microcomputer. In one embodiment, the leads 30, 32 are covered with a plastic shrink tubing 34. In a second embodiment, the leads 30, 32 are affixed to the antenna mast 16 by epoxy. Applicants respectfully disagree with the Examiner’s contention that the epoxy of Peel teaches, discloses or suggests the thermally and electrically good-conducting paste of the present invention. On the contrary, the artisan would recognize that conventional epoxies

are typically characterized by low thermal and electrical conductivities, and that providing an electrically and thermally conductive material to secure the leads 30, 32 to the mast 16 would be of no benefit. Applicants further note that Peel discloses the leads 30, 32, rather than the temperature sensor, being mounted by the epoxy.

Applicants respectfully submit that in addition to failing to teach, disclose or suggest **a temperature sensor mounted using thermally and electrically good-conducting paste** of the present invention, Peel further fails to teach, disclose or suggest **strip conductors** and **a temperature sensor mounted on a strip conductor**. Accordingly, there is no objective teaching in Peel that would enable one of ordinary skill in the art to modify the invention of Peel in a manner that would render the present invention obvious under 35 U.S.C. § 103(a)

The proposed combination of Honeywell and Peel fails to disclose at least the elements of a temperature sensor **mounted on a strip conductor, using a thermally and electrically conductive paste**, and **conductors formed as strips**. As Honeywell combined with Peel would fail to teach or suggest all of the elements of claim 1 of the Applicants' invention, it is respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claim 1 and also with respect to claims 2-4, 6 and 11 depending directly or indirectly from claim 1. Accordingly, it is requested that the rejection of claims 1-4, 6 and 11 under 35 U.S.C. § 103(a) be withdrawn.

Claim Rejections Under 35 U.S.C. §103, Claims 5 and 7-10

The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Honeywell in view of Peel in further view of U.S. Patent No. 4,520,661 (Tamai *et al.*, hereinafter "Tamai"). The Examiner has also rejected claims 7-10 under 35 U.S.C. § 103(a) as being unpatentable over Honeywell in view of Peel in further view of U.S. Patent No. 5,980,102 (Stulen *et al.*, hereinafter "Stulen"). The Examiner relies upon Tamai to teach that thermistors, thermocouples and platinum resistors are among the temperature sensing elements commonly selected for fluid temperature measurements. The Examiner further relies upon Stulen to disclose a temperature sensor housing having two semi-cylindrical parts connected to each other via a hinge and provided with a sealing device. Applicants respectfully traverse these rejections.

Applicants respectfully submit that Tamai and Stulen, both individually and in the proposed combinations, fail to disclose, teach or suggest a temperature sensor m unted on a strip conductor, using a thermally and electrically conductive paste, and conductors formed as strips. As the combinations of references proposed by the Examiner fail to teach or suggest all of the elements of claim 1 of the Applicants' invention, it is respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claims 5 and 7-10 depending directly or indirectly from claim 1. Accordingly, it is requested that the rejection of claims 5 and 7-10 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully submit that the present application, including claims 1-11, is in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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